

# World Ocean Database Project

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## Project Summary

The “World Ocean Database Project” has the goal of creating the most comprehensive, global, scientifically quality-controlled ocean profile-plankton database possible with all data in one common format. Releases of this database include *World Ocean Database 2005*, *World Ocean Database 2001*, *World Ocean Database 1998*, and *World Ocean Atlas 1994*. Data for 33 variables are available including temperature, salinity, oxygen, nutrients, and tracers among others. There are approximately 7.9 million temperature and 2.6 million salinity profiles included in the most release of this database (World Ocean Database 2005 (WOD05)).

The utility of NODC profile databases is given in Figure 1 which documents that NODC databases and products based on these databases have been cited more than 4960 times during the past 24 years.

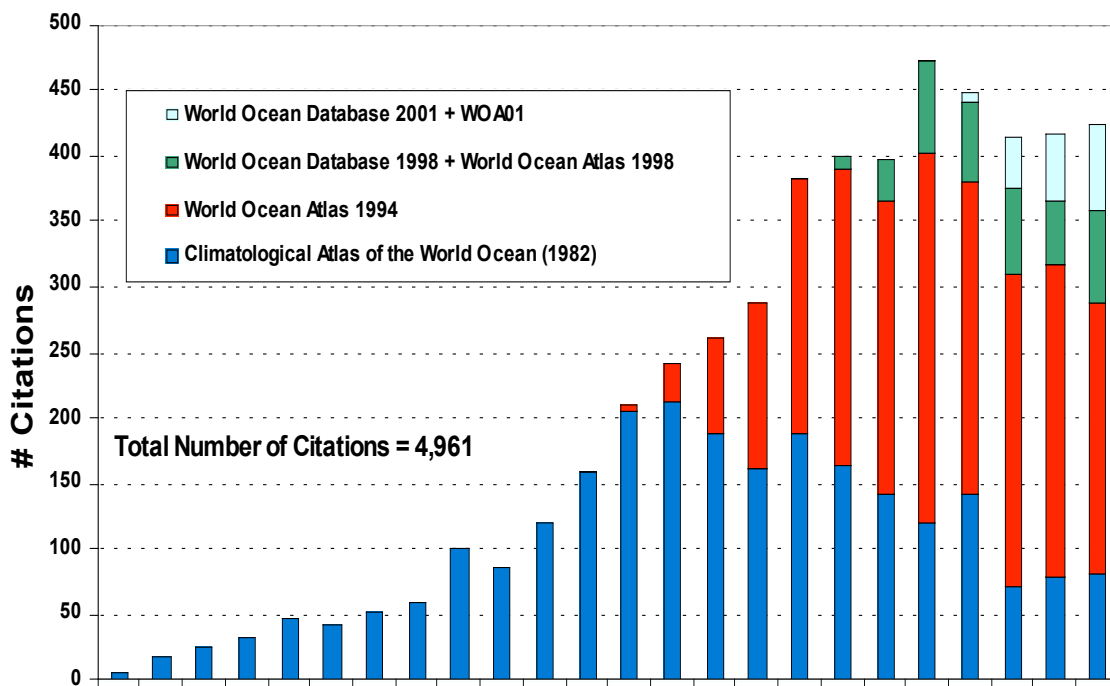


Figure 1. Time series of the number of citations as a function of year for NODC profile databases and products based on those databases.

NODC data and related products are used as initial and boundary conditions in ocean models and for ocean acoustic tomographic inversions and as “sea-truth” for verifying models among many other uses

All data in the WOD series are available both on DVD as well as online. Figure 2 shows that more than 700 million ocean profiles have been downloaded during the past four years alone.

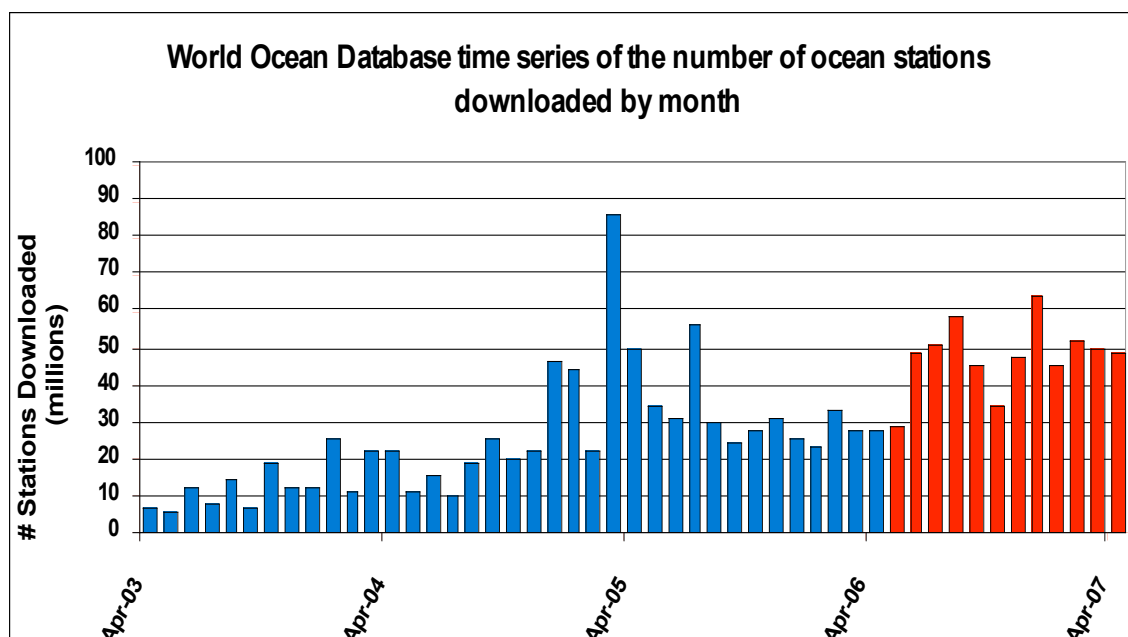


Figure 2. Number of casts in the World Ocean Database downloaded as a function of time.

## Accomplishments

We published *World Ocean Database 2005* (WOD05) in FY06 as reported last year.

During FY07 we began processing data for WOD09 and the following amounts of data have been processed:

1) Ocean Station Data (Bottle):	98,676 casts
2) Conductivity-Temperature-Depth:	49,349 casts
3) Expendable Bathythermograph:	58,069 profiles
4) Mechanical Bathythermograph:	2,880 profiles
5) Profiling Float	205,474 casts
6) Moored Buoy	77,186 profiles

## **Publications and Reports**

- Bindoff, N.L., J. Willebrand, V. Artale, A. Cazenave, J. Gregory, S. Gulev, K. Hanawa, C. Le Quéré, S. Levitus, Y. Nojiri, C.K. Shum, L. D. Talley, and U. Unnikrishnan, 2007: Observations: Oceanic Climate Change and Sea Level. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Maquis, K. B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, United Kingdom and New York, NY, USA.
- Boyer, T., S. Levitus, J. Antonov, R. Locarnini, A. Mishonov, H. Garcia, 2007: Changes in freshwater content in the North Atlantic Ocean 1955-2006, 34, L16603, doi:10.1029/2007GL030126.
- Stouffer, R. J., D. Seidov, and B. J. Haupt, 2007: Climate Response to External Sources of Freshwater: North Atlantic versus the Southern Ocean. *Journal of Climate*, 20, 436-448.
- Haupt, B. J. and D. Seidov, 2007: Strengths and weaknesses of the global ocean conveyor: Inter-basin freshwater disparities as the major control. *Prog. in Oceanogr.*, 73, 358-369.